L Number	Hits	Search Text	DB	Time stamp
6	11	("5763028" "5364665" "5695836" "4001870" "5229172").pn.	USPAT;	2003/09/09 15:31
			US-PGPUB;	
			EPO; JPO;	
		· · · · · · · · · · · · · · · · · · ·	DERWENT;	
			IBM_TDB	
7	13	("5763028" "5364665" "5695836" "4001870" "5229172" "6376559").pn.	USPAT;	2003/09/09 17:54
			US-PGPUB;	
		L ₂	EPO; JPO;	
			DERWENT;	
			IBM_TDB	
8	3	ogawa.in. and plasma near9 argon and polypropylene	USPAT;	2003/09/09 16:13
		·	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	}		IBM TDB	
12	149	(kazufumi near3 ogawa).in. and plasma	USPAT;	2003/09/09 16:15
			US-PGPUB;	
	-		EPO; JPO;	
			DERWENT;	
		,	IBM_TDB	
11	1	(kazufumi near3 ogawa).in. and plasma near9 argon	USPAT;	2003/09/09 16:15
	•	(Kazatanii noato ogawa).iii. ana plasina noato argon	US-PGPUB;	2003/03/03 10:13
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	
13	12	(kazufumi near3 ogawa).in. and plasma and (ar (inert near2 gas) argon)	USPAT;	2003/09/09 16:22
13	12	(kazurumi near5 ogawa).m. and piasma and (ai (mert near2 gas) argon)	US-PGPUB;	2003/09/09 10:22
	1		EPO; JPO;	
	1		DERWENT;	,
			IBM TDB	
14	3714	plasma near9 (ar (inert near2 gas) argon) same oxygen	USPAT;	2003/09/09 16:23
	3/14	prasma near 9 (ar (mert near 2 gas) argon) same oxygen	US-PGPUB;	2003/09/09 10.23
			1	
			EPO; JPO; DERWENT;	
				Į
15	244	(plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma	IBM_TDB	2002/00/00 16:24
	244	near9 treat\$9 same (plastic polypropylene polymeric)	USPAT;	2003/09/09 16:24
		neary treatsy same (prastic polypropylene polymeric)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
16	63	(mlagma magn) (an (in ant magn) and mlagma and mlagma	IBM_TDB	2002/00/00 16:25
10	0.5	(plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma near9 treat\$9 same polypropylene same (surface substrate)	USPAT;	2003/09/09 16:25
		lical 9 treat, 59 same polypropylene same (surface substrate)	US-PGPUB;	
			EPO; JPO;	
	-		DERWENT;	
17	02	(plagma mage) (an (input mage) and) arrest arrest and arrest	IBM_TDB	2002/00/00 16:25
17	83	(plasma near9 (ar (inert near2 gas) argon) same oxygen) and plasma	USPAT;	2003/09/09 16:25
		near9 treat\$9 same (polypropylene polyolefin polyethylene) near9	US-PGPUB;	
		(surface substrate)	EPO; JPO;	
			DERWENT;	
18			IBM_TDB	2002/02/02
	52	oxygen same (inert helium ar argon) same plasma near9 treat\$9 same	USPAT;	2003/09/09 16:26
		(polypropylene polyolefin polyethylene) near9 (surface substrate)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
10			IBM_TDB	
19	. 42	oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene	USPAT;	2003/09/09 16:29
		polyolefin polyethylene) near9 (surface substrate)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	<u> </u>		IBM_TDB	

20	2	(oxygen same (ar argon) same plasma near9 treat\$9 same (polypropylene	USPAT;	2003/09/09 16:28
20	2	polyolefin polyethylene) near9 (surface substrate)) same ((reactive near3	US-PGPUB;	2003/09/09 10.28
		functional\$4) hydroxy\$2)		
		Tunctional 54) hydroxy52)	EPO; JPO; DERWENT:	
	1	·		
	2	2000 2000 (2000 2000) 2000 212 2000 (2010 2000 2000)	IBM_TDB USPAT;	2007/00/00 16:42
21	2	oxygen same (ar argon) same plasma same (polypropylene polyolefin		2003/09/09 16:42
	1	polyethylene) near9 (surface substrate film) same ((reactive near3	US-PGPUB;	
		functional\$4) hydroxy\$4)	EPO; JPO;	
			DERWENT;	
22		Hannananan	IBM_TDB	000010010010010
22	2	"20020098296"	USPAT;	2003/09/09 16:43
-			US-PGPUB;	
·	ŀ		EPO; JPO;	
			DERWENT;	
			IBM_TDB	
23	60	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:56
		SiO\$2)	US-PGPUB;	
			EPO; JPO;	
	1		DERWENT;	
			IBM_TDB	
24	38	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:58
	1	SiO\$2) near9 (layer film coat\$3)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	}		IBM_TDB	,
25	19	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 18:14
		SiO\$2) near9 (layer film coat\$3)) same thick\$8	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	-
26	27	orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 18:07
		SiOx) near9 (layer film coat\$3)	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	
27	15	(orient\$6 near9 (polypropylene polyolefin) same ((silicon near3 oxide)	USPAT;	2003/09/09 17:58
		SiOx) near9 (layer film coat\$3)) same thick\$8	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM TDB	
28	117	(orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same	USPAT;	2003/09/09 18:14
		((silicon near3 oxide) SiO\$1x\$1)	US-PGPUB;	
		·	EPO; JPO;	
	1		DERWENT;	
			IBM TDB	
29	47	((orient\$6 stretch\$9 shrink\$9) same (polypropylene polyolefin) same	USPAT;	2003/09/09 18:15
		((silicon near3 oxide) SiO\$1x\$1)) same thick\$8	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM TDB	

Search History 9/9/03 6:24:44 PM Page 2 C:\APPS\EAST\Workspaces\10058925-tuning O-Si-O.wsp DERWENT-ACC-NO: 1993-175942

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DERWENT-

1993-175942

ACC-NO:

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TITLE:

Thermo-formable composite laminate with gas barrier properties - used for food container prodn., has inner sealable plastic layer, outer plastic layer and intermediate

layer of (semi)metal oxide

INVENTOR: NAEGELI, H; PIETZSCH, J; RUEEGG, K

PATENT-ASSIGNEE: ALUSUISSE LONZA SERVICES AG[SWAL]

PRIORITY-DATA: 1990CH-0001882 (June 6, 1990)

PATENT-FAMILY:

PUB-NO PUB-DATE LANGUAGE PAGES MAIN-IPC

CH 681530 A5 April 15, 1993 N/A

005

B65D 065/40

APPLICATION-DATA:

PUB-NO APPL-DESCRIPTOR APPL-NO

APPL-DATE

CH 681530A5 N/A

1990CH-0001882 June 6, 1990

INT-CL (IPC): B32B027/06, B65D065/40

ABSTRACTED-PUB-NO: CH 681530A

BASIC-ABSTRACT:

Container with barrier properties w.r.t gases and vapours made from a thermoformable or stretch formable composite laminate comprising a sealable plastics inner layer, a plastics outer layer and an intermediate layer between these comprising a layer of an oxide of a metal or semimetal or a mixt. of oxides of metals and/or semimetals applied to at least one plastic layer.

The inner and outer plastics layers are e.g films, composite films or laminates made up of polyolefins such as polyethylene or polypropylene; polyesters such as polyethylene tetephthalate; PVC; polystyrene; polyamides such as PA6, PA66, PA12, etc., copolymers of known materials, etc. The thickness of the individual plastics layers is e.g, 8-2000 (pref. 10-600) microns. The film is esp. mono- or biaxially oriented. The oxide layer is pref. of an oxide of Si, Al, Cr, Ta, Ni, Mo or Pb and is esp. of SiOx where x = 1-2 or AlOy with y = 0.2-1.5. The oxide layer(s) are pref. 5-500nm, esp. 10-200nm and partic. 20-1560nm thick. The oxide layers are applied by vacuum thin layer techniques based e.g, on electron beam vapourisation or inductive heating of crucibles.

USE/ADVANTAGE - Conventional laminates contg. a thin Al foil layer as barrier material can only be stretched with very narrow limits, whereas the present laminates can be thermoformed or stretch formed

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into packaging containers with good rigidity and good barrier properties w.r.t. gases and vapours, and which are transparent to light and to microwaves. The containers are esp. useful for food and perishable items and offer good protection against shock, oxidn. and other external mechanical, chemical and microbial influences to allow long term storage.

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A35 A92 P73 Q34

CPI- A05-F01E1; A05-F05; A09-A; A09-A01; A09-A06; A11-B08B; A12-C02; A12-P01A;

CODES: A12-S05A; A12-S06C;